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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/087,095

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Hideaki Ono

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EXAMINER

SALAD, ABDULLAHI ELMU

ART UNIT

PAPER NUMBER

2157

MAIL DATE

DELIVERY MODE

06/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/087,095		ONO ET AL.	
	Examiner		Art Unit	
	Salad E. Abdullahi		2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on 5/25/2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rajahalme U.S. Patent Application Publication No. 2004/0181603 A1[hereinafter Rajahalme] in view of Leung U.S. Patent Application Publication No. 2003/0217145[hereinafter Leung].

As per claim 1, Rajahalme discloses a load balancer (see fig. 1, element 5 and paragraph 0043) comprising:

means for extracting identifying information specific to a mobile IP terminal from an arrival packet(see fig. 1 and paragraph 0041); and

means for determining a single destination server, from plurality of servers corresponding to a destination of the packet to be connected based on the identifying information (see fig. 1 and paragraph 0041 and 0047); and wherein the destination server is associated with the mobile IP terminal according to a load balancing algorithm (see paragraph 0047).

Rajahalme is silent regarding: wherein the mobile terminal can communicate with the single destination server before mad after the mobile IP terminal moves from one network to another network.

Leung in an analogous art discloses a system where a mobile IP node roams between internal network and external network wherein the mobile terminal can communicate with the single destination server (home agent 210) before mad after the mobile IP terminal moves from one network to another network (see paragraph 0039). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention presented with teaching Rajahalme to incorporate the teachings of Leung such as enabling the mobile terminal to communicate with the single destination server (home agent 210) before mad after the mobile IP terminal moves from one network to another network. This implementation can be optimized so that home agents are centralized when the mobile node 245 is registering from the external network 230. Thus, even if the mobile node 245 roams back to the internal network 205, the home agent 210 will continue to act as a proxy for the mobile node 245 and the mobile node 245 will not deregister until it power offs.

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As per claim 2, Rajahalme discloses the load balancer as claimed in claim 1 wherein the identifying information comprises a home address included in a destination option header of the packet(see paragraph 0034).

As per claim 3, the load balancer as claimed in claim 1 wherein the identifying information is prescribed in predetermined lower bits of a source address of a packet utilizing a stateless address configuration method (the identification information to be prescribed in the lower bit of source address of Rajahalme is inherent since Rajahalme uses the source address to select the destination server, (see also paragraph 0023).

As per claim 4, Rajahalme discloses the load balancer as claimed in claim 1 wherein the identifying information comprises a security parameter index of the packet if encrypted (see paragraph 0020).

As per claim 5, Rajahalme discloses a load balancer comprising:
means for requesting a home agent to notify a change of a care-of address when the care-of address of a terminal has changed upon an arrival of a first packet addressed to a server (see paragraphs 041 and 0047-048); and
means for determining a destination server to be connected by regarding the notified care-of address as identifying information, the destination server corresponding to a destination of the packet (see fig. 1 and paragraph 0041 and 0047);and

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wherein the destination server is associated with the mobile IP terminal according to a load balancing algorithm (see paragraph 0047-0048).

Rajahalme is silent regarding: wherein the mobile terminal can communicate with the single destination server before and after the mobile IP terminal moves from one network to another network.

Leung in an analogous art discloses a system where a mobile IP node roams between internal network and external network wherein the mobile terminal can communicate with the single destination server (home agent 210) before and after the mobile IP terminal moves from one network to another network (see paragraph 0039). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention presented with teaching Rajahalme to incorporate the teachings of Leung such as enabling the mobile terminal to communicate with the single destination server (home agent 210) before and after the mobile IP terminal moves from one network to another network. This implementation can be optimized so that home agents are centralized when the mobile node 245 is registering from the external network 230. Thus, even if the mobile node 245 roams back to the internal network 205, the home agent 210 will continue to act as a proxy for the mobile node 245 and the mobile node 245 will not deregister until it power offs.

As per claim 6, Rajahalme discloses a load balancer (see fig. 1, element 5 and paragraph 0043) comprising:

means for requesting a terminal to notify a change of a care-of address when the care-of address of the terminal has changed upon an arrival of a first packet addressed to a server(see paragraphs 041 and 0047-048);

means for determining a single destination server to be connected by regarding the notified care-of address as identifying information , the destination server corresponding to a destination of the packet (see fig. 1 and paragraph 0041 and 0047);and

wherein the destination server is associated with the mobile IP terminal according to a load balancing algorithm (see paragraph 0047-0048).

Rajahalme is silent regarding: wherein the mobile terminal can communicate with the single destination server before mad after the mobile IP terminal moves from one network to another network.

Leung in an analogous art discloses a system where a mobile IP node roams between internal network and external network wherein the mobile terminal can communicate with the single destination server (home agent 210) before mad after the mobile IP terminal moves from one network to another network (see paragraph 0039). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention presented with teaching Rajahalme to incorporate the teachings of Leung such as enabling the mobile terminal to communicate with the single destination server (home agent 210) before mad after the mobile IP terminal moves from one network to another network. This implementation can be optimized so that home agents are centralized when the mobile node 245 is registering from the external network 230. Thus, even if the

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mobile node 245 roams back to the internal network 205, the home agent 210 will continue to act as a proxy for the mobile node 245 and the mobile node 245 will not deregister until it power offs.

As per claim 7, Rajahalme discloses the load balancer as claimed in claim 2 wherein when the extracting means extract a packet transmitted from a home link upon an arrival of the packet and the packet does not have the destination option header, the determining means determine the destination server by regarding a source address of the packet as the identifying information (see paragraphs 0023).

As per claim 8, Rajahalme discloses the load balancer as claimed in claim 1 wherein the determining means are provided with a table for storing an address of the destination server having a source address associated with the care-of address as a retrieval key, thereby determining the destination server using the source address of the arrival packet(see paragraphs 0023).

As per claim 9, Rajahalme discloses the load balancer as claimed in claim 5 wherein the determining means are provided with a table (inherent) for storing an address of the destination server having a source address associated with the care-of address as a retrieval key, thereby determining the destination server using the source address of the arrival packet, and the table prepares an entry with a new care-of address as a retrieval key when the new care-of address has

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been notified, and stores, as storing data, an address of the destination server stored as data of an entry of an old care-of address (see paragraphs 0023 and 0047).

As per claim 11, Rajahalme discloses the load balancer as claimed in claim 1 wherein a home agent of a mobile IP terminal as a substitute for the server is made a destination to be connected (see paragraph 0045).

As per claim 12 and 13 Rajahalme discloses a home agent (see fig. 1, element 2) which notifies, according to a request from a load balancer, binding cache information managed by the home agent itself to the load balancer periodically or when triggered in operation by a change of a care-of address of a mobile IP terminal (see paragraph 0041);

wherein a single server associated with the mobile IP terminal according to a load

balancing algorithm, is determined from among a plurality of servers based on identification information specific to the mobile IP terminal (see paragraphs 0023 and 0047); and

wherein the server corresponds to a destination of a packet (see paragraphs 0047-0048).

Rajahalme is silent regarding: wherein the mobile terminal can communicate with the single destination server before mad after the mobile IP terminal moves from one network to another network.

Leung in an analogous art discloses a system where a mobile IP node roams between internal network and external network wherein the mobile terminal can communicate with the single destination server (home agent 210) before and after the mobile IP terminal moves from one network to another network (see paragraph 0039). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention presented with teaching Rajahalme to incorporate the teachings of Leung such as enabling the mobile terminal to communicate with the single destination server (home agent 210) before and after the mobile IP terminal moves from one network to another network. This implementation can be optimized so that home agents are centralized when the mobile node 245 is registering from the external network 230. Thus, even if the mobile node 245 roams back to the internal network 205, the home agent 210 will continue to act as a proxy for the mobile node 245 and the mobile node 245 will not deregister until it powers off.

As per claim 13, Rajahalme discloses a mobile IP terminal (see fig. 1, element 1) which notifies, according to a request from a load balancer, binding cache information managed by the mobile IP terminal itself to the load balancer periodically or when triggered in operation by a change of a care-of address of the mobile IP terminal itself (see paragraph 0034).

As per claim 14, Rajahalme discloses the load balancer as claimed in claim 7 wherein the determining means are provided with a table for storing an address of the destination server having a source address associated with the care-of

address as a retrieval key, thereby determining the destination server using the source address of the arrival packet(see paragraphs 0023 and 0047).

Rajahalme is silent regarding: wherein the mobile terminal can communicate with the single destination server before mad after the mobile IP terminal moves from one network to another network.

Leung in an analogous art discloses a system where a mobile IP node roams between internal network and external network wherein the mobile terminal can communicate with the single destination server (home agent 210) before mad after the mobile IP terminal moves from one network to another network (see paragraph 0039). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention presented with teaching Rajahalme to incorporate the teachings of Leung such as enabling the mobile terminal to communicate with the single destination server (home agent 210) before mad after the mobile IP terminal moves from one network to another network. This implementation can be optimized so that home agents are centralized when the mobile node 245 is registering from the external network 230. Thus, even if the mobile node 245 roams back to the internal network 205, the home agent 210 will continue to act as a proxy for the mobile node 245 and the mobile node 245 will not deregister until it power offs.

As per claim 15, Rajahalme discloses the load balancer as claimed in claim 6 wherein the determining means are provided with a table (inherent) for storing an address of the destination server having a source address associated with the

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care-of address as a retrieval key, thereby determining the destination server using the source address of the arrival packet, and the table prepares an entry with a new care-of address as a retrieval key when the new care-of address has been notified, and stores, as storing data, an address of the destination server stored as data of an entry of an old care-of address(see paragraphs 0023 and 0047).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rajahalme and Leung as applied to claim 1 further in view of Luke et al., U.S. Patent publication No. 2004/0133634[hereinafter Luke].

As claims 10 and 16, Rajahalme and Leung disclose substantial features of the claimed invention as discussed above with respect to claim 1,

Rajahalme and Leung are silent regarding: wherein the determining means store a lifetime in the data of the entry, periodically decrement the lifetime, update the lifetime every time a packet using the entry has arrived, and invalidate the entry upon expiration of the lifetime.

Luke, discloses a time period based flow load balancing including the step of wherein the determining means store a lifetime in the data of the entry, periodically decrement the lifetime, update the lifetime every time a packet using the entry has arrived, and invalidate the entry upon expiration of the lifetime (see paragraph 0237, 0404 and 0543). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teaching of Luke into the system of Rajahalme and Leung such that once the period of time for an IP address has expired an updated balance decision can be made in the background and a new balanced server target be selected.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salad E Abdullahi whose telephone number is 571-272-4009. The examiner can normally be reached on 8:30 - 5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is **571-272-8300**.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

As
6/7/2007


ABDULLAH SALAD
PRIMARY EXAMINER